Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 1 of 40



Camal O. Robinson Deputy General Counsel

> Duke Energy 40 W. Broad Street Suite 690 Greenville, SC 29601

o: 864.238.4385 Camal.Robinson@duke-energy.com

June 19, 2023

VIA ELECTRONIC FILING

The Honorable Jocelyn G. Boyd Chief Clerk and Executive Director Public Service Commission of South Carolina 101 Executive Center Drive, Suite 100 Columbia, SC 29210

Re: Joint Petition of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC to Establish a Consolidated Informational Docket for Review and Consideration of Grid Improvement Plans (NDI Opened Pursuant to Commission Order No. 2020-533)

Docket No. ND-2020-28-E

Informational Update on Stakeholder Meeting Held June 15, 2023

Dear Ms. Boyd:

On August 12, 2020, by Order 2020-533 in Docket No. 2019-381-E, the Commission approved Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's (collectively, the "Companies") joint request to establish an informational docket for review and consideration of its Grid Improvement Plan. As a result of that order, on August 14, 2020, the Commission opened the above-referenced NDI docket.

On April 14, 2023, the Companies filed the 2022 South Carolina Grid Improvement Plan Status Reports for DEC and DEP. These reports show how the Companies are performing in terms of program costs and units compared to their targets. The narrative summary included with the reports elaborated on SC Grid Improvement Plan key accomplishments from 2019-2022.

On June 15, 2023, the Companies held a South Carolina Grid Improvement Plan Status Report virtual forum. During this forum, subject matter experts discussed 2022 South Carolina Grid Improvement Plan accomplishments, program and project specific highlights, and updated cost information. The Companies also provided information on two additional technologies that have advanced and are ready for deployment in South Carolina as part of the Grid Improvement Plan:

- 1. Transmission Substation Physical Security Program a project focused on hardening select substations against physical attacks through strategic enhancements
- 2. Reliability Battery Projects projects that improve reliability and resiliency to avoid

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 2 of 40

outages and speed restoration, while simultaneously enabling cleaner energy options by providing benefits to the bulk electric system.

Presenters were available for questions submitted during the forum, and the Companies appreciate the engagement from stakeholders who attended.

The following attachments enclosed with this update provide additional information on the virtual forum.

- Attachment A: Invitation to Virtual Forum
- Attachment B: Invitation Distribution List
- Attachment C: List of External Attendees Registered
- Attachment D: List of External Attendees
- Attachment E: South Carolina Grid Improvement Plan Virtual Forum Presentation
- Attachment F: Virtual Forum Follow-Up Survey

The Companies will continue to inform stakeholders, the Office of Regulatory Staff, and the Commission on developments in the Companies' Grid Improvement Plan.

Sincerely,

Camal O. Robinson

Attachments

cc: (via email w/ enclosure)

Counsel for Office of Regulatory Staff

Department of Consumer Affairs

Counsel for Sierra Club

Counsel for Walmart, Inc.

Counsel for SELC on behalf of SC NAACP, SCCCL & Upstate Forever

Counsel for Nucor Steel-South Carolina

Counsel for SCSBA and Cypress Creek Renewables

Counsel for SCEUC

Counsel for Vote Solar

Counsel for CMC Recycling

Hasala Dharmawardena

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 3 of 40



South Carolina Grid Improvement Plan

Stakeholder Virtual Forum – June 15, 2023

Duke Energy invites you to participate in a virtual forum for our South Carolina stakeholders to discuss South Carolina's Grid Improvement Plan.

During this forum we will update you on key highlights and accomplishments in the Grid Improvement Plan programs during 2022. We will also present information on forward looking reliability and technology developments ready to be applied to South Carolina projects.

We are interested in your feedback and will provide the opportunity for stakeholders to provide feedback and ask questions.

Please join us virtually on Thursday, June 15, 2023, 3:00 - 5:00 pm by registering below. Registration in advance is required for participation. The deadline to register is June 14, 2023.

Register

If you have any questions, please contact us at GIP-Engagement@duke-energy.com.

We look forward to your participation.

External Invitation List - 2023 SC GIP Virtual Forum 6-15-23

First		
Name	Last Name	Organization
Wes	Allsbrook	Broad River Electric
Len	Anthony	Law Office of Len Anthony (Duke Energy)
Teresa	Arnold	AARP SC
Andrew	Bateman	SC ORS
Brandon	Bates	FUJIFILM Manufacturing
Brandon	Bickley	SC ORS
John	Brooker	Conservation Voters of South Carolina
Jalen	Brooks-Knepfle	Conservation Voters of South Carolina
Kim	Campbell	Bailey & Dixon Law Firm (CIGFUR III)
Megan	Chase	Upstate Forever
Michael	Coleman	Upstate Forever
Christina	Cress	Bailey & Dixon Law Firm (CIGFUR III)
Thad	Culley	Sunrun
Bill	Cummings	SCEUC-Chair-Kimberly Clark
Hamilton	Davis	Southern Current
Steffanie	Dohn	Southern Current
Becky	Dover	SC Department of Consumer Affairs
Joey	Dr. Von Nessen	USC
Bess	Durant	Sowell & DuRant, LLC
Stephanie	Eaton	Spilman Law (WalMart)
Nanette	Edwards	SC ORS
Scott	Elliott	SCEUC Attorney-Elliott & Elliott
Frank	Fellerbe	Robinson Gray
John	Finnigan	Environmental Defense Fund
Ben	Garris	SC ORS
Brad	Gilks	New Indy
Andrew	Grieve	Pine Gate Renewables
Carrie	Grundmann	Spillman Law
Bob	Guild	Sierra Club
Roger	Hall	SC Department of Consumer Affairs
Lindsey	Hallock	Vote Solar
Lessie	Hammonds	SC ORS
Will	Harlan	Sierra Club
Carrie	Harris	Spillman Law
Rebecca	Haynes	Conservation Voters of South Carolina
Sara	Hazzard	South Carolina Manufacturers Alliance
Dawn	Нірр	SC ORS
Blan	Holman	Pine Gate Renewables
Nikki	Hutchison	AARP SC
Brad	Ikenberry	Michelin
Bryan	Jacob	Southern Alliance for Clean Energy (SACE)

Guyton Direct Exhibit 9
Docket No. 2023-388-E
Page 5 of 40

Trin	Vina	Auduban Cauth Carolina
Trip	King	Audubon South Carolina
Frank	Knapp	Small Business Chamber of Commerce
Alex	Knowles	SC ORS
Michael	Lavanga	SMXB Law
Robert	Lawyer	SC ORS
Bridget	Lee	Sierra Club
Kate	Lee	Southern Environmental Law Center (SELC)
Angela E	Leidinger	Clemson University
Indu	Manogaran	SC ORS
Brandon	Marzo	Troutman Pepper
Jeff	McKay	North Eastern Straetgic Alliance
James	McLawhorn	Urban League
Eddy	Moore	Coastal Conservation League
O'Neil	Morgan	SC ORS
Scott	Motsinger	Central Electric Power Cooperative Inc.
Ben	Mustian	SC ORS
David	Neal	Southern Environmental Law Center (SELC)
Jeffery	Nelson	SC ORS
Jenny	Pittman	SC ORS
Gretchen	Pool	SC ORS
Chris	Rice	Nucor Steel South Carolina
Hope	Rivers	South Carolina Technical College System
Shelley	Robbins	Upstate Forever
	Roberts	Spillman Law
Dave	Rogers	Sierra Club
John	Ruoff	The Ruoff Group
Derek	Sackler	Pine Gate Renewables
	Sandonato	SC ORS
David	Schwartz	SCEUC Chairman
	Seaman-Huynh	
Alex	Shissias	Shissias Law Firm, LLC
Maggie	Shober	Southern Alliance for Clean Energy (SACE)
Thomas	Siegrist	Stone Mattheis Xenopoulos & Brew
Dan	Sistrunk	Milliken
Loretta	Slater	Whitney Slater Foundation
Robert	Smith	MVA Nucor
Mark	Staiger	Section Manager Energy Management
Adam	Stein	Pine Gate Renewables
Hamm	Steve	SC ORS
Garrett	Stone	Nucor Steel South Carolina
Gudrun	Thompson	Southern Environmental Law Center (SELC)
Omari	•	
	Thompson	SC ORS
John	Tynan	Conservation Voters of South Carolina
John John	Tynan Wall	
John	Tynan	Conservation Voters of South Carolina

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 6 of 40

Sarah	Wilhite	SC ORS
Derrick	Williamson	Spilman Law (WalMart)
Benton	Wislinski	BGW Solutions
Leo	Woodberry	New Alpha Community Development Corporation

External Registration List - 2023 SC GIP Virtual Forum 6-15-23

First Name	Last Name	Organization
Jalen	Brooks-Knepfle	Conservation Voters of South Carolina
Eric	Burton	Pine Gate Renewables
Kim	Campbell	Bailey & Dixon Law Firm (CIGFUR III)
Emma	Clancy	Southern Environmental Law Center (SELSSC)
Р.	Cobb	AARP
Hamilton	Davis	Southern Current
Raven	DeMonia	Bailey & Dixon Law Firm (CIGFUR III)
Stephanie	Eaton	Spilman Law (WalMart)
Thomas	Gooding	Southern Environmental Law Center (SELC NC)
Jeffrey	Gordon	SC ORS
Andrew	Grieve	Pine Gate Renewables
Kate	Mixson	Southern Evnironmental Law Center (SELSSC)
Eddy	Moore	Coastal Conservation League
Rajat	Pungaliya	Pine Gate Renewables
Dave	Rogers	Sierra Club
Findlay	Salter	SC ORS
Anthony	Sandonato	SC ORS
David	Schwartz	SCEUC Chairman
Michael	Wallace	BrightNight

External Attendance List - 2023 SC GIP Virtual Forum 6-15-23

First Name	Last Name	Organization
Jalen	Brooks-Knepfle	Conservation Voters of South Carolina
Eric	Burton	Pine Gate Renewables
Emma	Clancy	Southern Environmental Law Center
Raven	DeMonia	Bailey & Dixon Law Firm (CIGFUR III)
Stephanie	Eaton	Spilman Law (WalMart)
Thomas	Gooding	Southern Environmental Law Center
Jeffrey	Gordon	SC ORS
Kate	Mixson	Southern Evnironmental Law Center
Findlay	Salter	SC ORS
Anthony	Sandonato	SC ORS
David	Schwartz	SCEUC Chairman

South Carolina Grid Improvement Plan

VIRTUAL FORUM

Thank you for joining us today.
The Virtual Forum will begin shortly.

June 15, 2023



MEETING LOGISTICS



This meeting will not be recorded by Duke Energy, and we ask that attendees do not record as well.



The presentation will be filed with the Commission after this session.



All attendees, apart from designated speakers, are muted to mitigate background noise disruptions.



Please submit questions through the Webex chat feature located in the lower left-hand corner of your screen. Speakers will address questions as time allows. If you have questions aside from today's topic or if time does not allow us to answer today, we will follow up with you directly.

TODAY'S AGENDA



Meeting Logistics and Presenters



Grounded in the Megatrends



2022 Key Accomplishments - Transmission & Distribution



Looking Forward (Technology and Infrastructure Advances)



Questions and Wrap-Up

ement

Background and 2022 Key Accomplishments

Brent Guyton, Director Customer Delivery Carolinas Asset Management

Transmission Projects Highlights

Bennett Fogg, Director Transmission Asset Management

Distribution Projects Highlights

- Integrated Volt-VAR Control ("IVVC")
 - Leslie Clark, Director Customer Delivery Project Management
- Self-Optimizing Grid, Distribution Automation, and Targeted Undergrounding Kenneth McCraw, Director Customer Delivery Project Management
- Enterprise Communications
 - Genevieve Burkindine, Director, IT Telecommunications

Looking Forward

- Transmission Substation Physical Security
 Bennett Fogg, Director Transmission Asset Management
- Energy Storage
 - Gray Tompson, Business Development Manager

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 13 of 40

BACKGROUND & 2022 KEY ACCOMPLISHMENTS

Brent Guyton, Director
Customer Delivery Carolinas Asset Management

7 MEGATRENDS CONTINUE TO DRIVE THE NEED FOR INVESTMENT

egatr	end	Description	Supporting information
	Impact of weather events	Increasing intensity in the number, severity and impact of weather events is leading to more outages for customers	South Carolina was impacted by a record of 10 "Billion-dollar storms" in 2020 (most in South Carolina's history) ²
	Technology advancements - renewables and DERs	Renewables and DERs are becoming a significant capacity resource on the grid and are expected to grow rapidly over the next few decades	Installed solar capacity in South Carolina will increase 17 % and reach ~4.1 GW by 2025 ¹
<u> </u>	Threats to grid infrastructure	Purposeful threats to the electric grid are on the rise, including physical and cyber threats (e.g., ransomware, theft)	Ransomware in the US increased 62% in 2021 ³ , and utility cybersecurity spending is expected to double by the end of the decade ⁴
	Environmental trends	Private and public sector commitments to clean energy escalates customers' desire for safe and reliable DER access	60% of Fortune 500 companies (incl. companies in SC such as BMW, Michelin, etc.) have set carbon emissions goals ⁵
%	Grid improvement	Grid improvement technology has advanced over the last decade, giving utilities alternatives to traditional grid infrastructure options	Advancements in tech provide new solutions; U.S. market for smart grid IT and analytics software to grow from \$3B to \$6B (2019 to 2028) ⁶
	Concentrated population growth	Population growth is concentrating in urban and suburban areas	Three South Carolina cities are among the 20 fastest growing nationally ⁷
^ 0 0 0 0	Customer expectations	Customers increasingly want to save money, reasonably reduce outages, and safely access clean energy options	Reliability and affordability are the most common feedback topics for Carolina's customers in a recent survey ⁸

Critical Grid Capabilities

Customer Benefits based on building several critical grid capabilities.



Reliability

Improve resiliency by increasing grid strength and ability to rapidly restore power.

Incorporate Distributed Energy Resources (DER) by providing consistent power flow.



Capacity

Incorporate DER by enabling 2-way power flow capability in more circuits.

Address changing demand by outfitting circuits to meet increasing load.



Automation & Communication

Improve resiliency by detecting faults and rerouting power to selfheal, reducing impact from outages.

Incorporate DER by enabling more efficient resource management.



2022 Planned and Actual Capital Expenditures (DEC and DEP Combined)

Grid Improvement Plan Programs (\$ in millions)		Planned 2022	Actuals 2022
Self-Optimizing Grid		\$64.3	\$74.6
Equipment Retrofit		6.8	5.0
Integrated Volt/VAR Control		38.1	30.8
Distributed System Demand Response		0.04	0.00
Transmission Hardening & Resiliency		28.3	20.9
Transformer Bank Replacement		10.4	8.7
Transmission System Intelligence		7.7	7.2
Oil Breaker Replacement		17.8	16.5
Targeted Undergrounding		19.3	26.0
Distribution Hardening & Resiliency		5.5	5.2
Enterprise Communications		27.0	24.3
Distribution Automation		12.9	18.6
Enterprise Applications		1.0	1.0
Integrated System Operations Planning		0.7	0.6
DER Dispatch Tool		1.1	1.1
Power Electronics for Volt/Var		0.2	0.1
Physical Security - Transmission		4.3	4.1
Physical and Cyber Security - Distribution		0.5	0.5
	Total	\$250.1	\$245.1



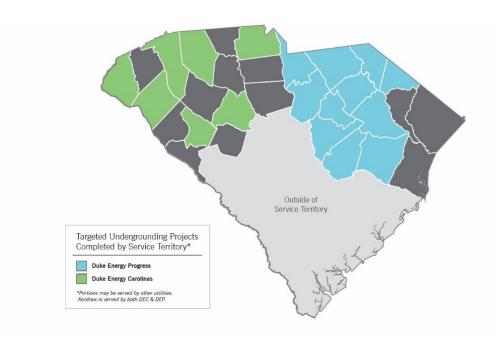
SELF-OPTIMIZING GRID

- Inception-to-date through December 31, 2022, the Self-optimizing Grid Program has saved customers more than 47.5 million minutes of total outage time.
- During 2022, the automated self-healing technologies utilized in the program activated at success rates of 97% for DEC and 91% for DEP.
- Through 2022, the Companies have installed self-healing technology serving 12.0% of customers in DEC and 50.9% of customers in DEP in South Carolina.



TARGETED UNDERGROUNDING ("TUG")

- During 2022, more than 10 miles of outage-prone overhead conductor have been converted to underground.
- This means that more than 3,300 customers will experience fewer outages in 18 of the 30 South Carolina counties served by DEC and DEP as shown below.





INTEGRATED VOLT-VAR CONTROL ("IVVC")

- Through Dec. 31, 2022, the IVVC program has installed 60% of the capacitors, installed 83% of the regulator controls and associated load balancing efforts resulting in 258 circuits commissioned in preparation for voltage reduction.
- In addition, 69% of the substations have completed construction work and have been commissioned.
- Successful enablement testing of the first South Carolina station and associated circuits occurred in November at Knollwood Retail in Spartanburg.
- Benefits from work completed to date include more efficient resolution of voltage issues due to remote operation capability and readiness for voltage reduction.



ENTERPRISE APPLICATIONS

Completed projects in 2022 include:

- Transmission Health & Risk Management Tool
- Customer Mapping Engine
- Grid Data Quality Project

Benefits:

- Extend the life of equipment.
- Reduce the likelihood of equipment failure.
- Improve restoration operations through customer notifications and meter status information.



TRANSMISSION HARDENING AND RESILIENCY

- The 44kV System Upgrade subprogram completed upgrades in Greenwood County in 2022, reducing outages due to weather impact for nearly 7,500 customers.
- The Buzzard Shield subprogram completed work on the Richmond-Newport 500kV line (located in York county) in 2022, decreasing significant voltage sags experienced by customers.



TRANSMISSION OIL BREAKER REPLACEMENTS

- Approximately 25 distribution and transmission oil breakers were replaced with gas and vacuum circuit breakers during 2022.
- These replacements addressed degraded circuit breakers and reduced the risk of extensive outages resulting from circuit breaker mis-operation or catastrophic failure.

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 22 of 40



TRANSMISSION – 2022 PROJECT HIGHLIGHTS

Bennett Fogg, Director Transmission Asset Management

Page 23 of 40

Transformer Bank Replacement

DETAILS

The Transformer Bank Replacement Program reduces the risk of disruptive, unplanned extended outages.

Robinson Plant #1 230-115kV transformer bank (and associate equipment) replacement improved reliability to transmission lines fed from the Robinson Plant Substation.

KEY ACCOMPLISHMENT

Eleven transformer banks were proactively replaced in 2022, reducing the risk of outage due to catastrophic equipment failure for more than 26,000 customers.



Oil Breaker Replacement

DETAILS

The Oil Breaker Replacement Program both increases reliability by replacing legacy assets to minimize customer outages due to mis-operations, as well as improves the environmental footprint through oil reduction.

- DEP Sumter 230kV breaker replacements impacts over 7,000 customers.
- DEC Pinewood Retail breaker replacements impacts over 5,000 customers.

KEY ACCOMPLISHMENT

Transmission and Distribution breakers replaced in 2022 increases reliability for more than 36,000 customers.



New vacuum breaker replaces oil breaker

Transmission Line Hardening & Resiliency

DETAILS

The Transmission Line Hardening & Resiliency program strengthens the grid against extreme weather and other physical threats.

The Cathodic Protection subprogram extends the life of existing, deteriorated transmission towers.

 Cathodic protection on Glen Springs Line increased resiliency for 177 towers.

KEY ACCOMPLISHMENT

More than 500 towers across South Carolina were enhanced to strengthen the grid in 2022.

Excavated



Restoration Installed



Transmission System Intelligence

DETAILS

The System Intelligence Program improves reliability for customers by implementing technology that will help avoid unplanned outages and reduce duration/ impacts when outages occur.

 Clover Tie 44kV terminal upgrades – Relay terminal upgrades impact approximately 9,000 retail and wholesale customers.

KEY ACCOMPLISHMENT

Installation of intelligent technology has been completed at 6 substations during 2022, improving protection and monitoring for more than 20,000 customers.



Original equipment



Updated equipment



DISTRIBUTION – PROJECT HIGHLIGHTS

Integrated Volt-VAR Control ("IVVC") Leslie Clark, Director Customer Delivery Project Management

Self-Optimizing Grid, Targeted Undergrounding, and Distribution Automation Kenneth McCraw, Director Customer Delivery Project Management

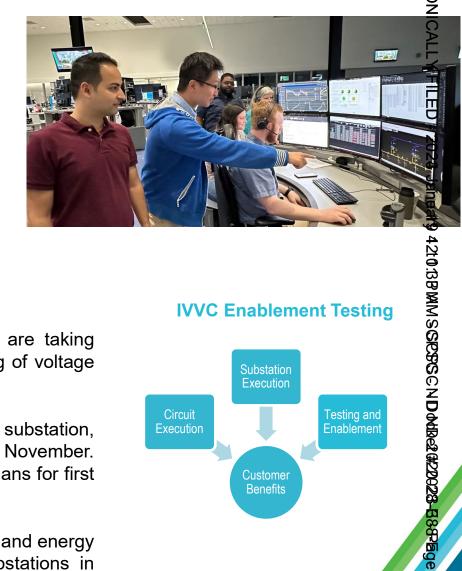
Enterprise Communications Genevieve Burkindine, Director, IT Telecommunications **Substations**

SUBSTATIONS

100%	100%	69%
Assessment	Engineering	IVVC Ready

CIRCUITS

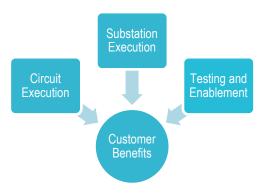
100%	88%	66%	
Assessment	Engineering	IVVC Ready Circuits	



TESTING AND ENABLEMENT

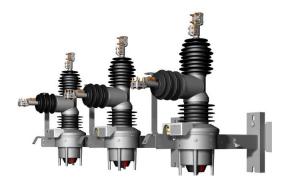
- · Software and reporting infrastructure upgrades are taking place to facilitate system operations and tracking of voltage reduction.
- Enablement testing on the first South Carolina substation, Knollwood Retail in Spartanburg, occurred in November. Enablement testing continuing in Q1-2023 with plans for first 24x7 Enablement in Q2-2023.
- The project is on track to start delivering capacity and energy savings on approximately 10% of targeted substations in 2023. Ramping up to 100% in 2025.

IVVC Enablement Testing



Self-Optimizing Grid

Self-Optimizing Grid (01/01/22 - 12/31/2022)	DEC	DEP
Number of circuits miles upgraded in 2022	43	33
Number of reclosers installed in 2022	182	62



Electronic Reclosers

Self-Optimizing Grid Benefits (01/01/22 - 12/31/2022)	DEC	DEP
Successful operations	28	65
Customers avoiding event	25,734	47,376
Outage minutes avoided	3.8M	10.6M



Capacitor and Voltage **Regulator Controls**

Distribution Automation

Distribution Automation Programs (01/01/22 - 12/31/2022)	DEC	DEP
Fuse Replacement	984	339
Hydraulic to Electronic Recloser	38	7
Urban Underground Automation (UUA)	4 vaults	N/A

UUA work executed in Greenville, SC.



Targeted Undergrounding (01/01/22 – 12/31/22)	DEC	DEP
Miles Completed	6.0	4.2
Total Number of Customers	2,367	942



2022 SC TUG Counties

Anderson, Chesterfield, Clarendon, Darlington, Dillon, Florence, Greenville, Greenwood, Kershaw, Lancaster, Lee, Marlboro, Newberry, Oconee, Spartanburg, Sumter, Williamsburg, York



Enterprise Communications delivers upgrades to address technology and infrastructure life cycle issues, increase reliability and add capacity for Duke Energy's network communications, foundational for grid operations.

Delivery 2022

- Completed Network Asset tool for lifecycle planning and impact analysis of changes or incidents by Duke Energy site.
- Upgraded multiple communications technologies key to Distribution and Transmission operations.
 - Long distance communications supported by 50 miles of fiber construction and 4 microwave hops in South Carolina.
 - 3 Multi-address system installs that enable visibility and control to SCADA equipment, primarily in support for Substations
 - 9 Power system upgrades.
 - Upgrades of routers and switches for 5 substation locations (GridWAN).
- Replaced an end-of-life communications tower and shelter in South Carolina.
- 260 cellular modem upgrades as carriers retire 2G/3G networks.

Tower Shelter





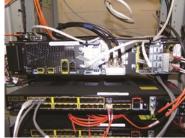
MAS



Fiber



GridWAN





LOOKING FORWARD

Transmission Substation Physical Security Bennett Fogg, Director Transmission Asset Management

Energy Storage

Gray Tompson, Business Development Manager, Energy Systems and Storage Group

Transmission Substation Physical Security

DETAILS

The Transmission Substation Physical Security Program focuses on hardening substations against physical attacks.

- For projects previously completed through 2022, enhancements were geared towards physically fortifying the station.
- In 2022, there were 93 attacks against electrical grid infrastructure in the US.
- Due to increased physical threats to electrical infrastructure, physical security measure enhancements are evolving towards implementing intrusion detection technology.
- Security measures are scaled based on a multi-tiered approach.

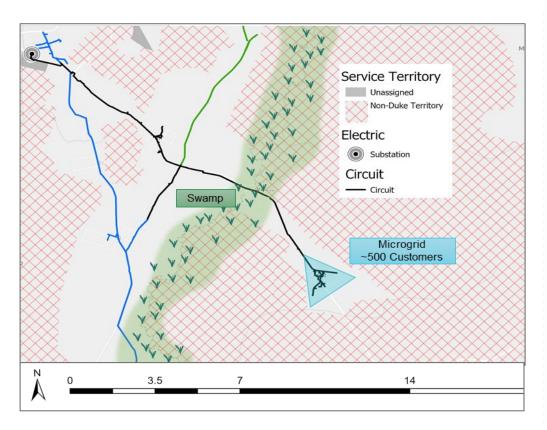
FOCUS SHIFT GIVEN RECENT THREATS

Implement enhanced security features at approximately 60 SC sites across DEP and DEC through 2026.





Reliability Battery Projects – Challenge and Solution



- **Customer Enclaves** Service Territory Assignment and Geographic Features result in "pockets" of customers served by Distribution system.
- Limited Options Construction of an "Alternate Feed" to these areas is impractical, and as a result they experience service reliability that is appreciably worse than system average.

 Resiliency Microgrid Installation of an energy storage system allows for creation of a Microgrid that will serve customers during failure of normal utility service (until repairs are completed).

 Bulk System Benefits When not utilized for backup service (likely >90% of the time), energy storage asset can provide benefits to the bulk electric system through economic dispatch.

Purpose

Reliability Battery Projects

ency to avoid outages and speed
ns by providing benefits to the bulk
more renewable resources.

Benefits The Reliability Battery projects improve reliability and resiliency to avoid outages and speed restoration, while at the same time enable cleaner energy options by providing benefits to the bulk electric system as it transitions from legacy generation types to more renewable resources.

Description

Scope - Battery sites, system/network upgrades, and islanding equipment.

Design – Optimized to improve reliability and capable of performing bulk system benefits.

Islanding – Energy stored in battery discharged upon loss of normal utility service.

Microgrid Areas – Microgrid areas contain several hundred customers including:

- utilities (ex. sewer pumps, cell towers)
- governmental facilities (ex. town halls, schools)
- important retail (ex. gas stations, convenience stores)
- public safety infrastructure (ex. traffic signals, fire stations).

Grid Connected – In "blue sky" conditions, assists in efficiently and economically operate the grid.

- Improved Customer Reliability
- Public Safety
- **Environmental**

WHAT'S NEXT

We are working through our plans and budget for the 2024-2026 grid improvement plan.

Our plan is expected to include physical security and reliability batteries in addition to previous categories of grid improvement projects.

We will be sending a save the date for a forum to be held later this year share the information.

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 38 of 40

QUESTIONS AND WRAP-UP

THANK YOU FOR YOUR PARTICIPATION AND FEEDBACK

We look forward to your participation in future sessions.

Contact Information: GIP-Engagement@duke-energy.com

The Virtual Forum has ended.

Guyton Direct Exhibit 9 Docket No. 2023-388-E Page 40 of 40

2023 SC GIP Virtual Forum 6-15-23 Post Forum Survey

- 1. Did you learn more about grid resiliency in South Carolina than you knew prior to this forum? (Yes/No)
- 2. Please rate the technical level of detail provided for the Grid Improvement Plan programs.
 - a. Too basic
 - b. Too advanced
 - c. The technical level was correct.
- 3. Which projects or technologies in today's presentation were of most interest to you?
- 4. The forum provided an opportunity for me to ask questions about specific programs or the Company's SC Grid Improvement Plan. (Yes/No)
- 5. Please provide any additional feedback you would like to share with us.